

Claims

1. A communication method for use in a communication network involving several user terminals communicating with at least one transmitter node, said transmitter node comprising a plurality of antennas, each of said user terminals comprising at least one antenna,
said method being characterized by;
selecting a first set of user terminals comprising at least one user terminal
selecting a second set of user terminals not comprised in the first set
adapting first communication parameters for the first set of user terminals according to a first principle suitable for optimizing communication with the first set of user terminals,
adapting second communication parameters for the second set of user terminals according to a second principle which is different from the first principle, in response to communication parameters selected by the first set,
transmitting to the first set of user terminals according to the first communication parameters and to the second set of user terminals according to the second communication parameters.
2. A method according to claim 1, wherein the first principle involves optimization with respect to full or partial Channel State Information (CSI), for example by Singular Value Decomposition (SVD).
3. A method according to claim 1 or 2, wherein the second principle makes use of opportunistic MIMO communication.
4. A method according to any one of the preceding claims wherein the first communication parameters are related to the transmit power and the beamforming matrix (V) at the transmitter side.

5. A method according to any one of the preceding claims, comprising the step of selecting the first set of user terminals in dependence of traffic and quality of service parameters.
6. A method according to any one of the claims 1-4, comprising the step of selecting the first set of user terminals in dependence of CSI knowledge.
7. A method according to any one of the claims 1-4, comprising the step of selecting the first set of user terminals in dependence of receiver antenna configuration.
8. A transmitter node (T4; T5) for use in a MIMO based communication network involving several user terminals (R41,...,R4K; R51,...,R5K) communicating with the transmitter node, wherein each of said user terminals comprises at least one antenna, said transmitter node comprising a plurality of transmit antennas arranged to transmit information to a plurality of receiver nodes, said transmitter node comprising:
 - selection means for selecting a first set (R41; R51,R52) of user terminals comprising at least one user terminal and a second set (R42,...,R4K; R53,...,R5K) of user terminals not comprised in the first set
 - first adaptation means (91) for adapting first communication parameters for the first set (R41; R51,R52) of user terminals according to a first principle suitable for optimizing communication with the first set of user terminals,
 - second adaptation means (93) for adapting second communication parameters for the second set (R42,...,R4K; R53,...,R5K) of user terminals according to a second principle which is different from the first principle, in response to communication parameters selected by the first set,
 - transmit means for transmitting to the first set of user terminals according to the first communication parameters and to the second set of user terminals according to the second communication parameters.

9. A transmitter node according to claim 8, wherein the first adaptation means (91) is arranged to optimize communication with the first set (R41; R51, R52) of user terminals with respect to full or partial Channel State Information (CSI), for example by Singular Value Decomposition (SVD).
10. A transmitter node according to claim 8 or 9, wherein the second adaptation means (93) is arranged to optimize communication with the second set of user terminals (R42,...,R4K; R53,...,R5K) according to opportunistic MIMO communication.
11. A transmitter node according to any one of the claims 8-10, wherein the first communication parameters are related to the transmit power and the beamforming matrix (V) at the transmitter side.
12. A transmitter node according to any one of the claims 8-11, comprising wherein the selection means is arranged to select the first set (R41; R51, R52) of user terminals in dependence of traffic and quality of service parameters.
13. A transmitter node according to any one of the claims 8-11, wherein the selection means is arranged to select the first set (R41; R51,R52) of user terminals in dependence of CSI knowledge.
14. A transmitter node according to any one of the claims 8-11, wherein the selection means is arranged to select the first set (R41; R51,R52) of user terminals in dependence of receiver antenna configuration.
15. A MIMO based communication network involving several user terminals communicating with at least one transmitter node, said transmitter node comprising a plurality of antennas, each of said user terminals comprising at least one antenna,

characterized in that said at least one transmitter node is a transmitter node according to any one of the claims 8 – 14.